



THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Manoocher Birang et al. Art Unit : Unknown  
 Serial No. : 09/399,310 Examiner : Unknown  
 Filed : September 20, 1999  
 Title : APPARATUS AND METHOD FOR IN-SITU ENDPOINT DETECTION FOR  
 CHEMICAL MECHANICAL POLISHING OPERATIONS

Commissioner for Patents  
 P.O. Box 1450  
 Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

I. References

Copies of the references listed on the attached form PTO-1449 are enclosed.

This statement is being filed within three months of the filing date of the application or before the receipt of a first Office action on the merits.

II. Other Information

Applicant also submits the following information:

A sample of a JR111 mounting pad, discussed as a possible pad material in U.S. Patent No. 5,489,233 to Cook et al., was tested and was found to transmit light in at least the wavelength range of 400-800 nm (the range of wavelengths emitted by the tungsten lamp used in the test). Similarly, a sample of Dow Isoplast 302EZ resin, discussed as a possible pad material in U.S. Patent No. 5,489,233 to Cook et al., was tested and was shown to transmit light in at least the wavelength range of 400-800 nm (the range of wavelengths emitted by the tungsten lamp used in the test).

Inventors Allan Gleason and Manoocher Birang received samples of a polishing pad material designated EX2000 from Rodel in the summer of 1994. The EX2000 polishing pad

CERTIFICATE OF MAILING BY FIRST CLASS MAIL

I hereby certify under 37 CFR §1.8(a) that this correspondence is being deposited with the United States Postal Service as first class mail with sufficient postage on the date indicated below and is addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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Attorney's Docket No.: 05542-146004 / 784-C3 - USA  
F04/PDD/CMP/RKK

included a translucent top layer having grooves formed in its upper surface, and an opaque gray foam sublayer. In the samples they received in the summer of 1994, the opaque gray foam sublayer covered the entire bottom surface of the translucent top layer.

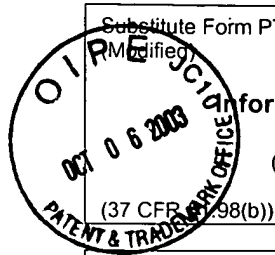
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Respectfully submitted,

Date: 9/18/03

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Substitute Form PTO-1449

U.S. Department of Commerce  
Patent and Trademark OfficeAttorney's Docket No.  
05542-146004Application No.  
09/399,310**Information Disclosure Statement  
by Applicant**

(Use several sheets if necessary)

(37 CFR 1.98(b))

Applicant  
Manoocher Birang et al.Filing Date  
September 20, 1999Group Art Unit  
Unknown**U.S. Patent Documents**

Examiner Initial	Desig. ID	Patent Number	Issue Date	Patentee	Class	Subclass	Filing Date If Appropriate
	AA	4,927,485	05/22/1990	Cheng et al.			
	AB	5,081,796	01/21/1992	Schultz			
	AC	5,196,353	03/23/93	Sandhu, et al.			
	AD	5,257,478	11/02/93	Hyde et al.			
	AE	5,413,941	05/1995	Koos et al.			
	AF	5,433,651	7/1995	Lustig et al.			
	AG	5,489,233	02/06/1996	Cook et al.			
	AH	5,499,733	03/19/1996	Litvak			
	AI	5,605,760	02/25/1997	Roberts			
	AJ	5,609,511	03/11/1997	Moriyama et al.			
	AK	5,946,927	09/07/1999	Dieckmann et al.			
	AL	5,964,643	10/12/1999	Birang et al.			
	AM	6,045,439	04/04/2000	Birang et al.			
	AN	6,280,290	08/28/2001	Birang et al.			
	AO	6,524,164	02/25/2003	Tolles			
	AP	6,537,133	03/25/2003	Birang et al.			

**Foreign Patent Documents or Published Foreign Patent Applications**

Examiner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Class	Subclass	Translation	
							Yes	No
	AQ	EP 0663265	03/06/1998	Europe				
	AR	FR-A-1 075 634	10/1954	France			X	
	AS	JP 3-234467	10/18/91	Abstract Of Japan			X	
	AT	JP 5-138531	06/01/93	Abstract Of Japan			X	
	AU	JP 07-52032	02/07/1995	Abstract Of Japan			X	
	AV	JP 57-138575	08/26/1982	Abstract Of Japan			X	
	AW	JP 58-178526	10/19/1983	Abstract Of Japan			X	
	AX	WO 93/20976	10/1993	WIPO				

Examiner Signature

Date Considered

EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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(Modified)U.S. Department of Commerce  
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(Use several sheets if necessary)

(37 CFR § 1.97(b))

Applicant  
Manoocher Birang et al.Filing Date  
September 20, 1999Group Art Unit  
Unknown**Other Documents (include Author, Title, Date, and Place of Publication)**

Examiner Initial	Desig. ID	Document
	AY	Hench, "In situ real-time ellipsometry for film thickness measurement and control," J. Vac. Sci. Technol. A. Vol. 10, No. 4:934-938 (Jul/Aug. 1992).
	AZ	Sautter, et al., "Development Process Control and Optimization Utilizing an End Point Monitor," SPIE Vol. 1087:312-321 (1989).
	AAA	Jurczyk, et al., "Process Detection System," IBM Technical Disclosure Bulletin, Vol. 18 No. 6:1867-1870 (November 1975).
	ABB	Anonymous, "End-Point Detection of Oxide Polishing and Planarization of Semiconductor Devices," Research Disclosure, No. 340 (August 1992).
	ACC	Rodel, "Wafer Mounting Assemblies and Materials", ©1992 Rodel, Scottsdale, Arizona.
	ADD	Carotta, et al., "Effect of Thickness and Surface Treatment on Silicon Water Reflectance," Solar Energy Materials and Solar Cells 27: 265-272 (1992).
	AEE	Rodel, "Glass Polishing Pads", January 1993, Scottsdale, Arizona

Examiner Signature

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